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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LUK, EMMANUEL S

ART UNIT

PAPER NUMBER

1722

12

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AS12

Office Action Summary

Application No.

09/719,136

Applicant(s)

JAMES, MALCOLM BARRY

Examiner

Emmanuel S. Luk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 18-34 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 18-21 and 25-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Cavazos.

Cavazos teaches a mold (12) that contains a closed chamber (14) having a liquid coolant that is vaporized, the liquid vapors are cooled by the condensing means (20), and the liquid then flow back into the liquid (Col. 1, lines 39-46). The liquid level of the chamber covers at least part of the area of the mold to be cooled and the manifold (16) holds the space above the liquid that contains the vapor of the liquid. The mold temperature is controlled via sensor (29) that sends a signal to the temperature controller, this in turn adjusts the a control valve (33) for the controlling water flow through the condenser, thus changing the reducing the or increasing the cooling water flow through the condenser depending upon the difference between the temperature sensed by the sensor and the set point in the controller (Col. 2, lines 50-65).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 21-24 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cavazos.

Cavazos teaches a mold (12) that contains a closed chamber (14) having a liquid coolant that is vaporized, the liquid vapors are cooled by the condensing means (20), and the liquid then flow back into the liquid (Col. 1, lines 39-46). The liquid level of the chamber covers at least part of the area of the mold to be cooled and the manifold (16) holds the space above the liquid that contains the vapor of the liquid. The mold temperature is controlled via sensor (29) that sends a signal to the temperature controller, this in turn adjusts the a control valve (33) for the controlling water flow through the condenser, thus changing the reducing the or increasing the cooling water flow through the condenser depending upon the difference between the temperature sensed by the sensor and the set point in the controller (Col. 2, lines 50-65).

Cavazos fails to teach heating means in the liquid the mold is a mold for molding plastic materials, the mold is a die for mold casting metals, mold is a mold for injection molding of plastic materials, and the mold is for molding by thermoforming of plastic materials.

Cavazos teaches the means for controlling the temperature in the mold via sensors and flow of cooling liquid in the condenser. The heating means is an alternative way of controlling the temperature of the water and thus the cooling of the mold by changing the rate of the evaporation of liquid to the vapor. Cavazos provides an alternative via the condensation rate of the vapor back into the liquid. It would have been obvious to one of ordinary skill in the art to have substituted one method for another in controlling the rates of either the evaporation or the condensation of the liquid or vapor because it controls the rate of heat transfer of the mold or die and thus the system can maintain the temperature desired of the mold or die.

In regards to claims 21-24, these are intended use of the mold. Cavazos clearly teaches a system for cooling a mold system, and the mold is well known for use in the shaping of materials. That the material can be metal, plastic materials only depends on the material used for making the mold due to the temperatures of the molten materials. Thus, it would have been obvious to one of ordinary skill in the art to modify Cavazos with use of the mold for the various molding of materials because it is an intended use of an apparatus.

5. Claims 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cavazos.

Cavazos teaches two different methods for start-up of the molding process, one method is initially partially filling the system with the phase change liquid, such as distilled water, as the mold is heated up, the air is purged from the system via bleed

valve (26) until moisture reaches the detector (34). The other method involves opening the valves open, heating the mold and then releasing water into the system, as it evaporates, thus starting the air purging process as the valve remains open until the moisture sensor (34) detects the presence in the evaporation path through the molds and closes the valves.

Cavazos fails to teach a method of filling the chamber with liquid and extracting a portion of the liquid.

However, Cavazos teaches alternative methods to purging the chamber of unwanted gases and filling it with the liquid and the vapor of the liquid. The methods include means that does not need the use of a vacuum and thus does not call for pumps and other extra equipment that would be needed to purge the system. It is a known alternative to have filled the chamber with water and pumped the excess water out thus creating a space having unwanted gas or vapors than the vapors from the liquid. It would have been obvious to one of ordinary skill in the art to modify Cavazos by substituting the purging methods using the valves with known methods of purging the system of unwanted gas via means of pumps.

Response to Arguments

6. Applicant's arguments filed 5/9/03 have been fully considered but they are not persuasive. The applicant's argue about the intended use with Cavazos. The argument concerning the structure of Cavazos is considered moot since the applicant's structural claims do not discuss anything about the size of the bores. All that is claimed is a

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closed chamber and that there is a space in the chamber for the vapor. There is no clarification in the claims to discern where the mold has to be in relation to the chamber, just 'at least one of the areas from which heat is to be taken'. Therefore, Cavazos teaches the claimed structure. Furthermore, regardless of the intended use argument, the structural features are met in the *apparatus* claims. Method of use does not have significant weight. The method claims 32-34 that the applicants have argued *do not* claim anything about the type of molding. In fact, most of the claims only discuss a mold for of a type, a mold for cooling, or a method of cooling of a mold. There was never any mention in those claims of the type of molding done. Cavazos teaches mold cooling, thus is applicable to the applicant's claims.

In regards to the applicant's discussion concerning the narrow chamber and the efficiency, the prior art reference still meets the claimed structure wherein there is a chamber above the liquid that the vapor is present. The further argument concerning the closed system does not fully examine the Cavazos reference. There, the bleed valve (26) is only open during the initial start up where air in the system is released out of the system. The valve is open until the sensor detects the desired moisture setting and then the valve is *closed* (Col. 3, lines 11-19 and 31-42). The system is a closed system during the actual mold cooling process. Therefore, the Cavazos reference does teach the applicant's claimed structure and method.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel S. Luk whose telephone number is (703) 305-1558. The examiner can normally be reached on Monday through Friday 8 to 4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (703) 308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

E.L.
July 21, 2003


W. L. WALKER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700